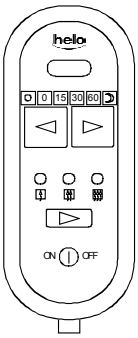
helo
GENUINE SAUNA & STEAM

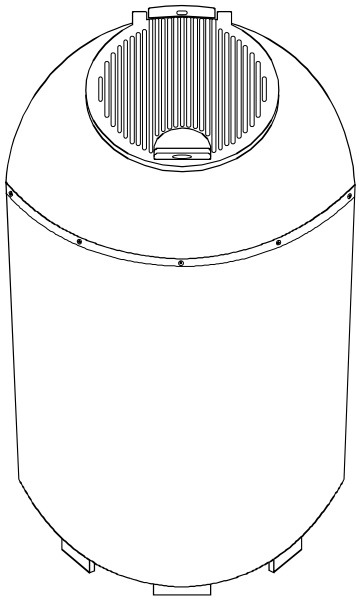
HEAT STORING ELECTRIC SAUNA HEATER

Saunatonttu 8, 6, 4 and 3
INSTRUCTIONS FOR INSTALLATION AND USE

400V~ 3N
Model 2000780 8.0 kW
Model 2000764 6.4 kW
Model 2000748 4.8 kW
3.4 kW

230V~ 1N
Model 2000734 3.4 kW
2.0 kW





HEAT STORING SAUNA HEATERS ARE TECHNICALLY ADVANCED WITH SEVERAL OPTIONS FOR USE. THEREFORE, PLEASE READ THIS MANUAL CAREFULLY.

THE PERSON INSTALLING THE SAUNA HEATER SHOULD LEAVE THESE INSTRUCTIONS TO THE PREMISES FOR THE FUTURE USER.

CONTENTS

7013977 314 SKLH 16D

You are now using an electric sauna heater that is manufactured in accordance with the best knowhow and experience in the world.
Helo Oy group has its roots in 1919. We've been manufacturing electric sauna heaters for more than 50 years.
Over the decades, several hundred work years have been used for developing sauna heaters. This experience and knowhow is known around the world: several testing institutes in the world's sauna countries have given their approval to Helo Oy's electric sauna heaters.

GENERAL INFORMATION

1. Please read the instructions for use carefully.
2. Wash and pile the stones.
3. Before turning the sauna heater on, make sure the sauna room is suitable for taking a sauna bath.
4. Preheat the sauna heater in full power for at least 3 hours. The heating removes any storage grease. If an odour still persists, continue heating until it stops.
   Remember adequate airing between heatings. The door or window must be kept closed during heating.
5. Persons with reduced physical and mental capacity, sensory handicap, or little experience and knowledge about how the device is operated (e.g. children), should only operate the device while supervised or according to instructions given by the persons in charge of their safety. Make sure that children are not playing with the sauna heater.
6. If any problems occur, please contact the nearest authorised service.
   Contact information is available at www.helo.fi.

PREPARING FOR SAUNA HEATER INSTALLATION

When you get these instructions, a suitable sauna heater is usually selected already. However, the following points should be considered and checked before installing and using the sauna heater.

1. The ratio of the heater's input (kW) to the sauna room's volume (m^3). The minimum and maximum volumes stated must not be exceeded.
2. The sauna room must be at least 1900 mm high.
3. The heat storing surfaces in the sauna room ceiling and walls (brick, tiles, plaster, timber, or such) must be insulated with e.g. mineral wool.
4. The fuse size and the power supply cable diameter must be adequate for the sauna heater's power rating.
5. Adequate space must be reserved for the sauna heater. See Installation on page 8.
6. The control panel must be placed so that is easily accessible. See instructions for installation on page 8.

SAUNA ROOM

The walls and especially the ceiling of a sauna room should be thermally well insulated. All heat storing surfaces (brick, plaster and such) must be insulated, using also aluminium paper (bright side inwards).
Timber surfaces must also be insulated.
Fire authority regulations must be considered when covering chimney flues. Always check adequate insulation in different surfaces and structures with a professional (an architect or a structural engineer).

Uninsulated heat storing surfaces will slow down the rising of temperature. Apart from that, they may first release steam into the sauna room, because with the Saunatonttu sauna heater, the sauna room temperature is raised rapidly by throwing water on the sauna heater.
1 m^2 of uninsulated stone surface in the ceiling and upper walls increases the measured volume of the sauna room by 1.5–2 m^3, and a similar surface of timber wall a half of that. However, the specified minimum and maximum volume of the sauna room must be adhered to. Steam room boarding (wood panel) must extend all the way to the ceiling, so that the hot air near the ceiling does not flow into the air passage behind the boarding and heat up the insulation. Moreover, hot air carries a lot of water, which will condensate into liquid water when the air cools down behind the panel.

Appropriate sauna room height is 2–2.1m. When the sauna room is not too high, the upper seat can be installed at 1050–1100mm from the ceiling, and the bather can sit where the heat is.
The minimum height of a sauna room according to the regulations is 1900mm.

SAUNA ROOM VENTILATION

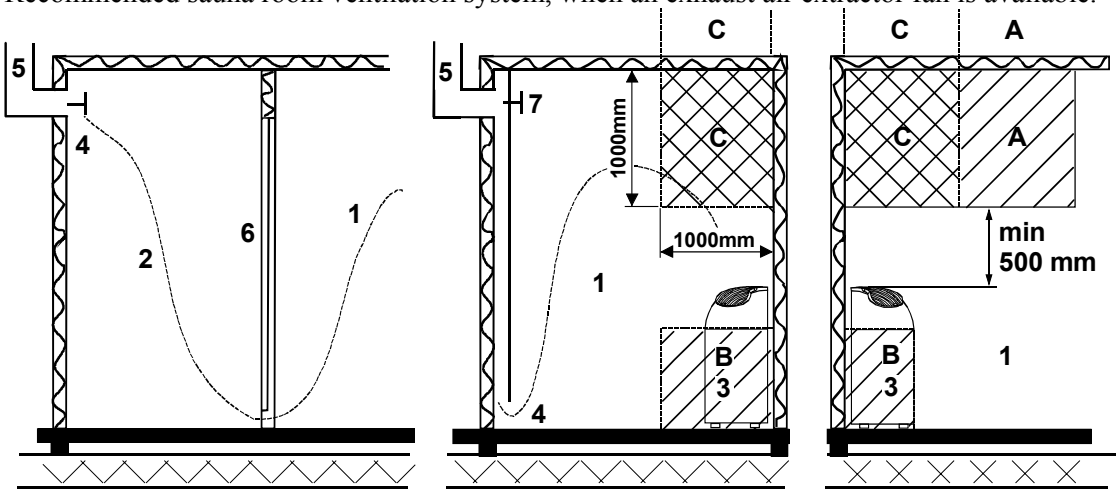
Appropriately planned ventilation creates pleasing conditions for bathing and saves energy. Proper ventilation and smooth steam ensure enjoyable conditions for bathing. Always use a professional planner for a ventilation plan.

The placement of air valves is critical for successful ventilation. Fresh air intake valve should be placed in zone A and at least 500mm above the sauna heater. Exhaust valve is placed near the floor. Alternatively, the exhaust air can be led under the sauna room door to the washroom exhaust valve. This is a very good solution in family saunas. See the image below.

If there is no exhaust flue to the roof and no forced ventilation, the exhaust valve must be placed at least 1m higher than the intake valve to ensure air circulation.

SAUNA ROOM VENTILATION

Recommended sauna room ventilation system, when an exhaust air extractor fan is available.



1. Sauna room
2. Washroom
3. Electric sauna heater
4. Exhaust valve
5. Exhaust flue or channel
6. Door to the sauna room
7. A ventilation valve can be installed here; keep it closed while the sauna is heated and during bathing.

A fresh air intake vent can be positioned in the zone A. Make sure the incoming fresh air will not interfere with (i.e. cool down) the sauna heater's thermostat near the ceiling

The zone B serves as the incoming air zone, if the sauna room isn't fitted with forced ventilation. In this case, the exhaust valve should be installed at least 1m higher than the inlet valve.

A FRESH AIR INTAKE VALVE MUST NOT BE PLACED IN ZONE C, IF THE THERMOSTAT IS NEAR THE CEILING (NOT APPLICABLE FOR HEATERS WITH BUILT-IN THERMOSTAT).

SAUNA HEATER INSTALLATION

The sauna heater is a free-standing model. The base must be solid, because the sauna heater weighs about 150 kg with the stones. The adjustable legs are used for balancing the heater.

The heater must not be installed in a rectangular bay.

The minimum safety clearances are specified in a plate attached to the lower front of the heater, see the image on page 8. The specified minimum safety clearances must be adhered to regardless of the surface materials in the sauna room. This also applies to incombustible surface materials, as provided in the electrical safety regulations.

The ceiling must not be clad with light-weight cladding (fire classified or other), because they may cause a fire hazard.

Two wooden fasteners are provided with “Saunatonttu” sauna heater to prevent it from moving. See the image on page 8.

If the sauna heater is not installed in a corner, it can be fixed on the floor by the adjustable legs. The heater may also be locked in place by wooden stoppers. The stoppers must not be installed higher than 400mm from the floor.

A single sauna heater is allowed per a sauna room.

MAINS CONNECTION

Electrical installation must be carried out by a qualified electrician. The electrician must have qualifications for electrical installation or be supervised by a person with such qualifications.

Sauna heater is connected with a semi-permanent connection. Use H07RN-F (VSN) (60245 IEC 66) cable or a corresponding type. Do not use PVC insulated cable as a connection cable for the sauna heater. All sauna heater's output cables must be of the above or corresponding type.

See the circuit diagrams at the end of the instructions.

The maximum installation height for the connection cable's connecting box is 0.5m from the floor. If the connecting box is located further than 0.5m from the heater, the maximum height is 1m from the floor. However, in this case (further than 0.5m), the connection cable must be of heat-resistant type (T 170°).

Adhere to the effective electrical safety regulations when installing the sauna heater.
The heater's functions must not be tested without stones.

ELECTRIC HEATING TOGGLE

Sauna heater has a connection (n:o 55) for controlling the electric heating toggle. The connection and the heating elements are simultaneously live. This means that the sauna heater thermostat also controls the heating toggle. In other words, heating turns on once the sauna thermostat cuts power off the sauna heater.

NOTE: There is no toggle between the simmering levels and heating.

SAUNA HEATER THERMOSTAT

The sauna heater thermostat limits the temperature of the stones to max 350°C. The thermostat is inside the connecting box behind the sauna heater.

When installing, make sure the thermostat is turned right to the max position (as if tightening a screw).

TEMPERATURE LIMITER

The sauna heater has a temperature limiter as a safety device to stop the heater from overheating in case of fault. The limiter is reset manually. To reset, press the round rubber cover at the back of the sauna heater, top right. The limiter cannot be reset until the heater has cooled down.

The temperature limiter cuts off the power very rarely. If the limiter cuts of the power, call in a service person to correct the fault.

SAUNA HEATER STONES

The electric sauna heater stones should have the following qualities:

1. Heat resistant and resistant to great temperature fluctuations caused by turning water into steam.
2. Odour and dust free.
3. Suitable (not too good) thermal conductivity to allow water to "stick" to the stones and not flow past them. Water stays better on uneven cleavage planes.
   (An example of a too good thermal conductivity is a hot plate, where water doesn't stay but forms small beads of water on the surface.)
4. Large enough to allow good ventilation inside the heater, which effectively and evenly cools down the heating elements.

When piling the stones, remove the black ceramic rings from the opening in the heater..

The heater takes about 100 kg of stones. They should have the qualities listed above.

The stones supplied by the manufacturer have all the necessary qualities. They're prewashed, but we recommend rinsing off the excess dust before piling them in the heater. Pile the stones carefully without pushing them in. Follow the three following principles in piling the stones to make sure the sauna heater operates properly and to prolong the useful life of the heating elements.

1. Pile the stones airily and use large enough stones (70….100 mm).
2. Don't push the heating element tubes together, try to keep them separate.
3. Re-pile the stones often enough to remove broken and brittle stones before they harm the heating elements.

Depending on the use, the stones should be piled again at least after every 400th sauna bath.

Pile the largest stones in the package on the edges and on the top.

Fill in the entire space intended for stones. However, leave a 50 mm gap at the opening under the lid to allow the steam pressure to normalize. If there are stones immediately on the mouth of the opening, the steam pressure may shoot some of the water out of the heater as hot drops.

Small and brittle stones block the heat transfer from the heating elements. Therefore the elements may overheat, which shortens their useful life.

The warranty does not cover damage caused by too small, brittle, poor quality or too tightly piled stones.

NOTE: Structural clay tiles are not allowed. Using structural clay tiles may cause damage to the sauna heater. Damages caused by using structural clay tiles will not be covered by the warranty.

CONNECTION OF CONTROL CURRENT

There are two switches at the lower front of the sauna heater. The left one is the main switch, 0/I. The switch should be in the upper position, when you want the heater to warm up.

The right hand switch is the direct connection for 200 W simmering level to be used in remote control etc.

If you connect a telephone remote control relay between the sauna heater's connectors X-X and the 200 W switch is in the upper position, you can remotely switch on the 300 W simmering level by telephone. The 100 W simmering level switches on automatically.

For example, if you phone in the 300 W simmering level on Thursday, the sauna will be warm on Friday, when you arrive to your cabin. The 300 W heating time is about 30 hours.

Note! There should be another switch connected in parallel with the remote control relay for use in the location.

8 kW: Saunatonttu's simmering level is 260W + 100W = 360W, so the heating takes 24 hours.

HEATING THE SAUNA HEATER TO STANDBY MODE

Ever Ready heaters can be preheated to a standby mode (with lid closed) by switching on the 0.3 kW simmering level for about 30 hours. For faster preheating, you can also switch on the actual full sauna bathing power:

Saunatonttu 3	**2.0 kW**	**Heats up in ~4-6 h**
Saunatonttu 3 and 4	**3.4 kW**	**Heats up in ~3-6 h**
Saunatonttu 4	**4.8 kW**	**Heats up in ~2-5 h**
Saunatonttu 6	**6.4 kW**	**Heats up in ~2-5 h**
Saunatonttu 8	**8.0 kW**	**Heats up in ~2-4 h**

The above values are approximate.

NOTE: Never heat up the sauna heater without stones. Damages caused by heating an empty heater will not be covered by the warranty.

When heating the sauna heater for the first time, the sauna room should be ventilated properly as a new heater releases some odour. Furthermore, when preheating the sauna with the full sauna bathing power on as indicated above, let the temperature settle for an hour (with 0.3 kW simmering mode on). After that, switch the full bathing power on again and leave the lid open for about an hour. Now the sauna heater is ready for bathing.

More effective ventilation than usual may be necessary for the first couple or so heating times, especially if there's odour.
Choose the 0.2 kW or 0.3 kW for a simmering level. The volume of the sauna room is a good indicator: 0.2 kW is enough for up to 7 m³ and 0.3 kW for spaces over 7 m³. Also the number of sauna bathing sessions should be taken into account when choosing the simmering level.

When on standby mode (simmering level) the lid should be closed.

If you take a sauna bath only once a week or less frequently, you can use the 0.1 kW simmering level. In this case the sauna heater must be preheated before taking a sauna bath. The preheating time depends on the heater output: 3.4 kW/1 hour, 4.8 kW/40 min, 6.4 kW/30 min and 8kW/20 min.

The simplest way to preheat a sauna heater to standby mode is using the lid control. Refer to the control panel operating instructions. Lid control is a very easy way to use the heater.

If you don't want to use the standby mode, you can also heat the sauna heater up by using the full sauna bathing power level. Even though heating takes longer than heating a regular sauna heater, it doesn't use much more energy and the sauna room is ready for bathing for the entire evening.

Alternatively, you can keep the Saunatonttu sauna heater always ready by having low power on or using the lid control.

TAKING A SAUNA BATH

When you start bathing, the temperature is first "as it is", because this model doesn't preheat the sauna room air like a traditional heater does. This way the moisture in the air moistens your skin and makes breathing easy. Enjoy the smooth steam!

When the Saunatonttu sauna heater is on standby mode, you don't need to plan for taking a sauna bath, because you'll only need to switch the bathing mode on and the sauna is ready. You can adjust the temperature and moisture to your liking by throwing water on the stones.

If the sauna room heats up too much, you can either close the lid or turn the sauna bathing mode off and enjoy the stored heat in the stones.

Always check the sauna room before switching the sauna heater on to make sure it is fit for bathing.

The Saunatonttu heater can be adjusted for different tastes. The large volume of stones enables bathing in a low temperature (~60-65 °C), which ensures adequate moisture in the sauna room air. Traditionally low temperatures allow enjoying the sauna bath without suddenly feeling you “need some air”, and the steam feels relaxing and soft. According to current knowledge, a recommended sauna bathing temperature is below 70 °C. The moisture and oxygen content in the air are interrelated depending on the temperature. In temperatures from 55 to 60 °C, changes in these contents are relatively low. In temperatures over 60 °C the moisture content begins to drop and will drop rapidly as the temperature rises. In temperatures over 70 °C it is not possible to have a pleasantly soft sauna bath because there isn't enough moisture in the air.

Those who prefer a dry and hot sauna bath in a temperature over 70 °C can heat the sauna room by leaving the lid open and turning the full sauna bathing level on. The heating time depends on the room's heat demand. For a hot bath, the volume (m³) of the sauna room cannot be greater than 1.6 times the heater output (example: 1.6 x heater output 6.4 kW = 10 m³) . The walls and the ceiling should also have adequate thermal insulation.

The sauna room ventilation must adhere to the instructions; a fresh air intake valve (conical valve) above the sauna heater (to allow heating of the sauna room's lower parts) and an exhaust valve near the floor (to keep the heat in the sauna room). The door must also be insulated.

If the sauna room walls have uninsulated surfaces (tiling, brick, glass brick, timber etc.), they should be warm before having the sauna bath. Cold surfaces produce steam and significantly slow down heating of the sauna room.

To warm up any heat storing surfaces, keep the full power on and the lid open before taking a sauna bath. The heating time depends on the surface area, the sauna room volume and the heater output. You'll find the heating time out in practice, but as a reference, stone surfaces above the heater adsorb 1 kWh/m² and timber surfaces 0.5 kWh/m².

Example: If the sauna room has 3.0 m² of stone surface above the heater, just to heat up the stone surface with a 3.0 kW heater takes one hour.

For proper use of the heater and the sauna and to enjoy the heat storing properties of the heater, all heat storing surfaces 600 mm and over above the floor should be insulated (Note: also timber walls).
Remember not to throw water on the stones straight from the water bucket, as the heater is capable of vaporizing great quantities of water. A regular sauna ladle takes a suitable amount of water.

The volumes are calculated for sauna rooms with full thermal insulation, where the thickness of the frame and insulation is 100mm.
Stone and glass surfaces add to the required power output. 1 square meter of stone or glass adds 1,5 cubic meters to the volume.

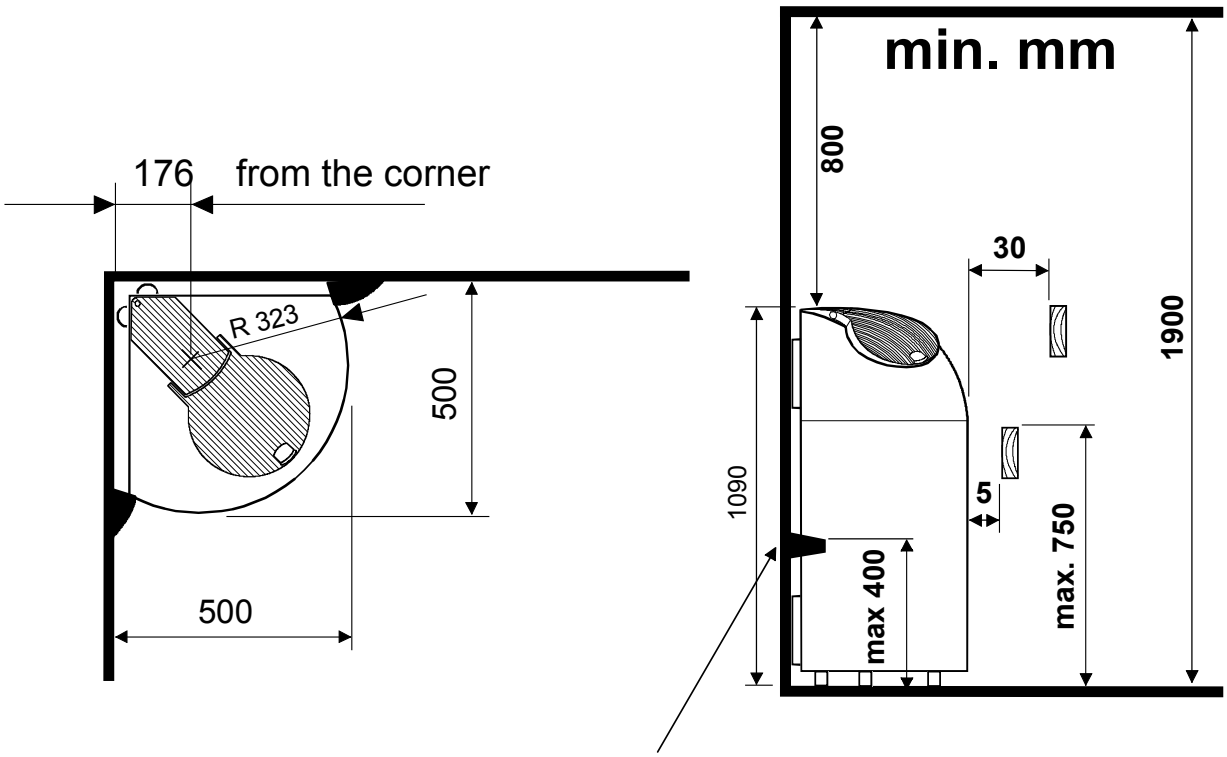
Table Saunatonttu heaters / sauna room volume

Saunatonttu		3		4		6	8
Input kW		2,0	3,4	3,4	4,8	6,4	8,0
Min volume	m^3	3	4	4	5	7	9
Max volume	m^3	6	8	8	11	14	17

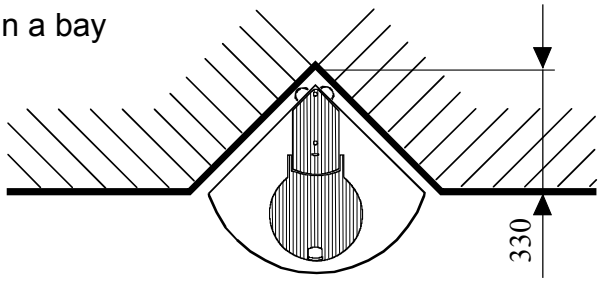
Table Saunatonttu heaters' connection cables and fuses

Output kW	Heater connection cable H07RN-F/ 60245 IEC 66 400V 3N~	Fuse A	Heater connection cable H07RN-F/ 60245 IEC 66 400V 3N~	Fuse A
2,0			3 x 1.5	1 x 10
3,4			3 x 2.5	1 x 25
3,4	4 x 1.5	2 x 10		
4,8	5 x 1.5	3 x 10		
6,4	5 x 1.5	3 x 10		
8,0	5 x 2.5	3 x 16		

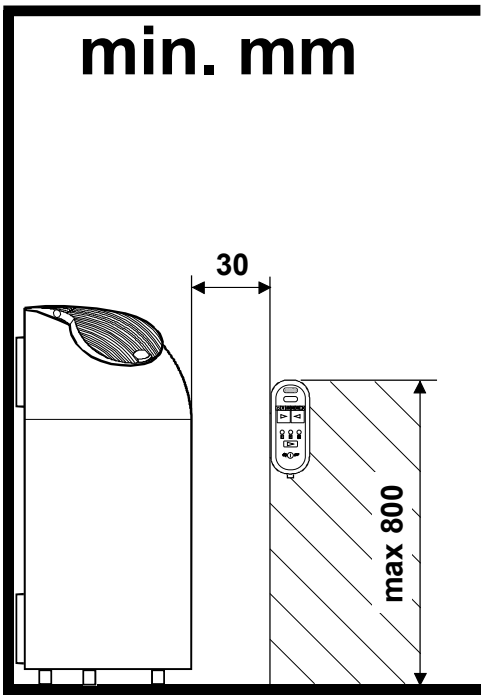
Installation of the sauna heater and the control panel



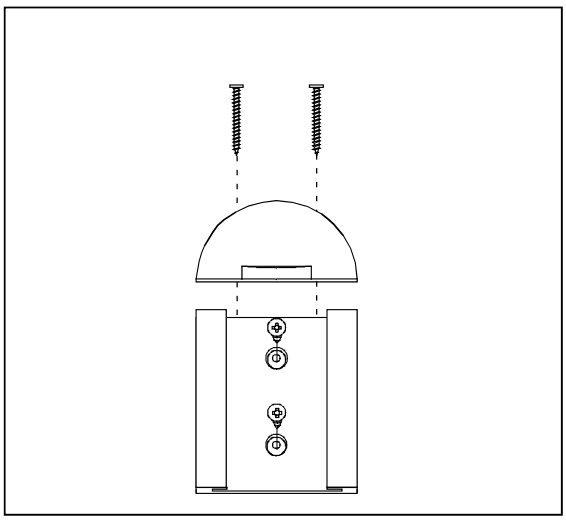
Installation in a bay

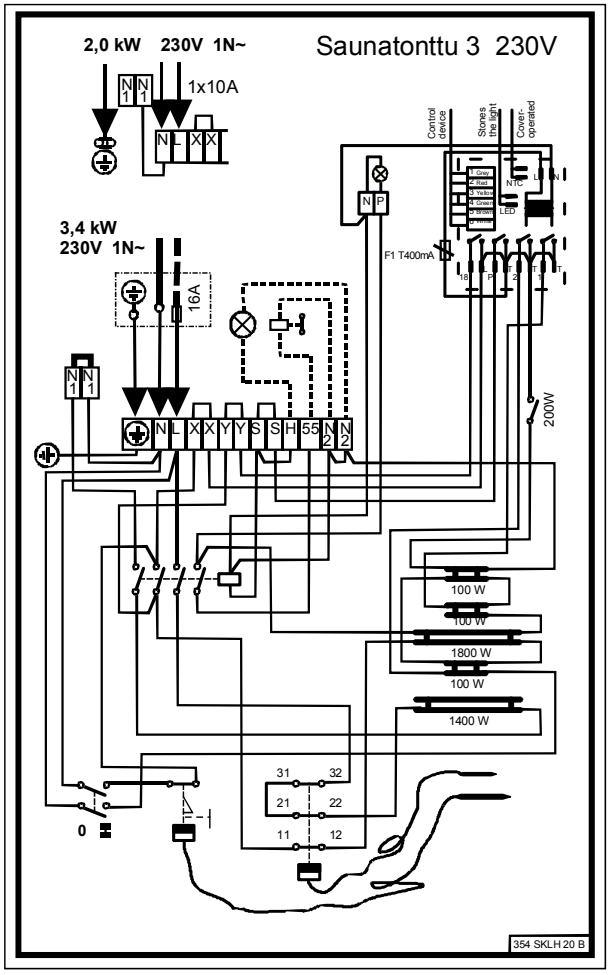


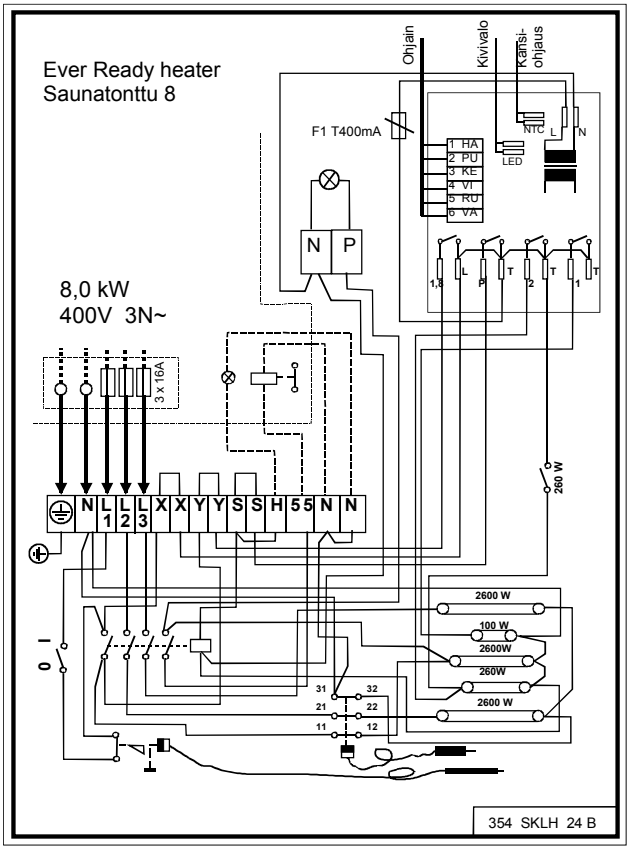
Installation of the control unit in the sauna room

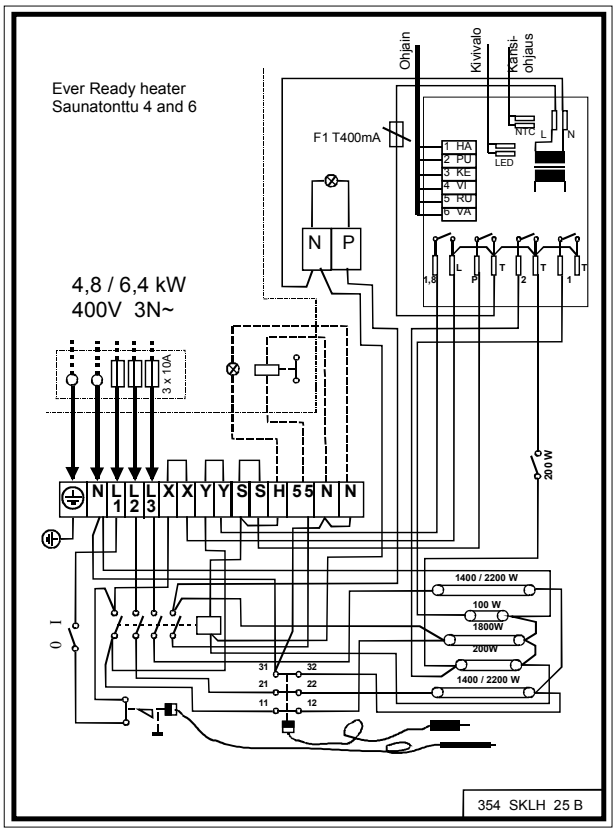


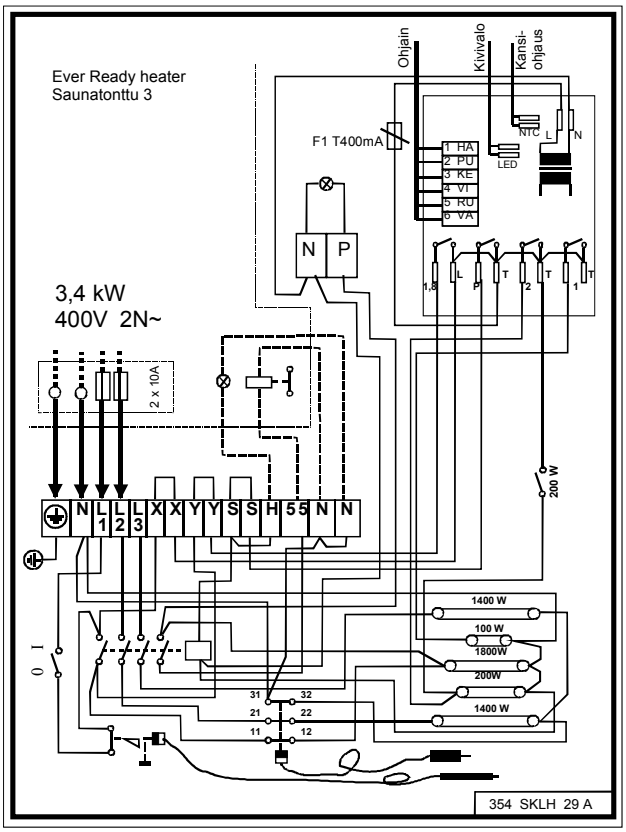
Installation of the control unit mount onto the wall




Saunatonttu 3 230V
2,0 kW 230V 1N~
1x10A
3,4 kW
230V 1N~
16A
F1 T400mA
200W
100 W
100 W
1800 W
100 W
1400 W
354 SKLH 20 B


Ever Ready heater
Saunatonttu 8
Ohjain
Kivivalo
Kansi-ohjaus
F1 T400mA
8,0 kW
400V 3N~
3 x 16A
260 W
2600 W
100 W
2600W
260W
2600 W
354 SKLH 24 B


Ever Ready heater
Saunatonttu 4 and 6
Ohjain
Kivivalo
Kansi-ohjaus
F1 T400mA
4,8 / 6,4 kW
400V 3N~
3 x 10A
200 W
1400 / 2200 W
100 W
1800W
200W
1400 / 2200 W
354 SKLH 25 B


Ever Ready heater
Saunatonttu 3
Ohjain
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F1 T400mA
3,4 kW
400V 2N~
2 x 10A
200 W
1400 W
100 W
1800W
200W
1400 W
354 SKLH 29 A

Instructions for using Saunatonttu heater's control panel

Switch the power on by the O/I switch at the lower left of the heater.
When the heater is switched on, the simmering level 1 turns on and its indicator LED lights up. (1st on the bottom row)
Press the **on - off** switch once; all the indicator lights go off and the control panel is in a wait state.
Press the same switch again; the zero light lights up and the control panel is operable.
Choose the preferred simmering level by using the lower arrow key. The light indicates the selected level.
In absence of an indicator light all simmering levels are off.
Simmering levels: 1. 100W, 2. 200W and 3. 300W

NOTE: **Simmering level cannot be changed when the timing or lid control is on.**
When on lid control, the simmering level is always 2 and cannot be changed.

Lid control

To select **lid control** press the left arrow key to light up the green indicator light **K**.
When the sauna heater is cold, the following happens when the lid is closed:

- The power switches on and the top indicator lights **4, 5 and 6** light up.
- Simmering level 2 is automatically on.
- Once the heater is heated up, the power turns off, the indicator lights **4, 5 and 6** go off and the simmering level 2 maintains the heat.

After you've opened the lid for taking a sauna bath, the power will turn on in ~3-5 minutes, if the temperature sensor allows.
When you close the lid, the power will turn off in ~3-10 minutes depending on the temperature, and the simmering level 2 maintains the heat.

NOTE: When you choose the lid control, the control panel will automatically leave the lid control mode and return to the zero mode in six hours, if the lid is not closed before that.
(Each time you open the lid, the six hour period restarts and makes sure the heater safely returns to the zero mode, if you accidentally leave the lid open after taking a sauna bath.)

You can leave the lid control by pressing the right arrow key once so that the zero light lights up and the green lid control indicator light **K** turns off.

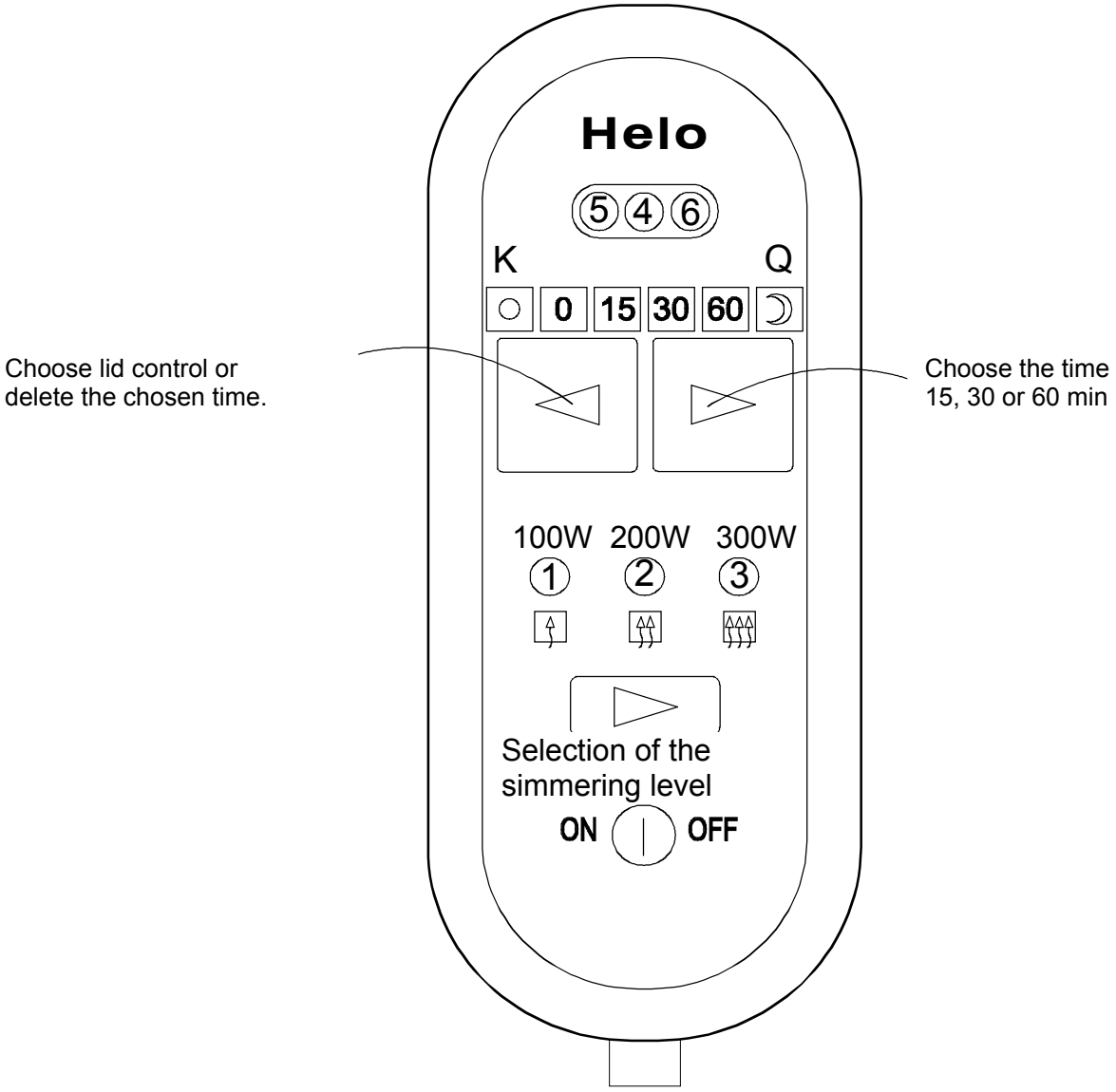
Timing

The heater can be timed by pressing the right arrow key for timing of 15, 30 or 60 minutes, indicated by a light. The upper indicator lights **4, 5 and 6** light up and the power will turn on for the chosen time, after which the control panel will automatically return to the zero mode. The simmering level, if selected, maintains the heat. If you want to turn the timing off earlier, press the left arrow key until the zero light lights up.

The indicator light at the top of the heater will turn off, when the thermostat resets (the heater in max temperature).

Emergency operation

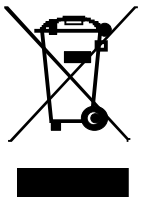
In case of a power failure the device switches to a power save mode (all indicator lights turn off and the switch functions are off), but the selected functions are still on.
Once the power returns, the control panel continues normal operation.
Emergency operation lasts for 30 minutes.
If the power failure lasts longer than 30 minutes, the control panel functions will reset and it returns to its initial state.
Once the power returns, the 100 W heating element turns on and the indicator light 1 lights up.
All functions can be turned off by pressing the on-off key.



Ympäristönsuojeluun liittyviä ohjeita

Tämän tuotteen käyttöiän päätyttyä sitä ei saa hävittää normaalin talousjätteen mukana, vaan se on toimitettava sähkö- ja elektroniikkalaitteiden kierrätykseen tarkoitettuun keräyspisteeseen.

Symboli tuotteessa, käyttöohjeessa tai pakkauksessa tarkoittaa sitä.



Valmistusaineet ovat kierrätettävissä merkintänsä mukaan. Käytettyjen laitteiden uudelleenkäytöllä, materiaalien hydöyntämisellä tai muulla uudelleenkäytöllä teet arvokkaan teon ympäristömme hyväksi.
Tuote palautetaan ilman kiuaskiviä ja verhouskiviä kierrätyskeskukseen.

Tietoa kierrätyspaikoista saat kuntasi palvelupisteestä.

Anvisningar för miljöskydd

Denna produkt får inte kastas med vanliga hushållssopor när den inte längre används. Istället ska den levereras till en återvinningsplats för elektriska och elektroniska apparater.

Symbolen på produkten, handboken eller förpackningen refererar till detta.

De olika materialen kan återvinnas enligt märkningen på dem. Genom att återanvända, nyttja materialen eller på annat sätt återanvända utsliten utrustning, bidrar du till att skydda vår miljö.
Produkten returneras till återvinningscentralen utan bastusten och eventuell täljstensmantel.

Vänligen kontakta de kommunala myndigheterna för att ta reda på var du hittar närmaste återvinningsplats.

Instructions for environmental protection

This product must not be disposed with normal household waste at the end of its life cycle. Instead, it should be delivered to a collecting place for the recycling of electrical and electronic devices.

The symbol on the product, the instruction manual or the package refers to this.

The materials can be recycled according to the markings on them. By reusing, utilising the materials or by otherwise reusing old equipment, you make an important contribution for the protection of our environment. Please note that the product is returned to the recycling centre without any sauna rocks and soapstone cover.

Please contact the municipal administration with enquiries concerning the recycling place.

Hinweise zum Umweltschutz

Dieses Produkt darf am Ende seiner Lebens-Dauer nicht über den normalen Haushaltsabfall Entsorgt werden, sondern muss an einem Sammelpunkt für das Recycling von elektrischen und elektronischen Geräten abgegeben werden.

Das Symbol auf dem produkt, der Gebrauchsanleitung oder der Verpackung weist darauf hin.

Die Werkstoffe sind gemäß ihrer Kennzeichnung wiederverwertbar, Mit der Wiederverwendung, der stofflichen Verwertung oder anderen Formen der Verwertung von Altgeräten leisten Sie einen wichtigen Beitrag zum Schutze unserer Umwelt. Dieses Produkt soll ohne Steine und Speicksteinmantel an dem Sammelpunkt für Recycling zurückgebracht werden.

Bitte erfragen Sie bei der Gemeindeverwaltung die zuständige Entsorgungsstelle.